

Date: Tue, 19 Jan 93 21:38:07 PST
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V93 #80
To: Info-Hams

Info-Hams Digest Tue, 19 Jan 93 Volume 93 : Issue 80

Today's Topics:

CDMA Packet Radio (WAS Re: Who do repeater coordinators represent?)
 CW practice software
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 intermod, overload, desense?
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 OHR Spirit XCVR Kit [LONG]
 Radio Shack Business Band Radio
 Real hams?
Taking apart interior trim of '88 Nova for a UHF/VHF ham antenna..
 Two-Line Orbital Element Set: Space Shuttle
 Undocumented C558 functions ?!
 USCG cw changes
 Voice mail "repeaters"
What kind of license is required to transmit on the 10GHz freq.?

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 19 Jan 93 21:55:14 GMT
From: news-mail-gateway@ucsd.edu
Subject: CDMA Packet Radio (WAS Re: Who do repeater coordinators represent?)
To: info-hams@ucsd.edu

Nice to see your post, but I might nitpick that it may be spread
(useful to combat multipath) but it isn't CDMA (because of the
limitations in spreading code that can be selected in the amateur service).

Can any one else operator on the same carrier frequency as you with the same chip sequence? The answer is no -- it acts like FM in the this circumstance -- a receiver will either sync to you or to the other TX, but you can't control that because the spreading sequences differ only in phase. If you can't share the channel then it's not true CDMA.

I would certainly like to hear more about the synchronisation techniques you are using -- this is always the most difficult part of SS!

For the wider audience I have a few comments on comments on 97.311 "SS emission types" in Part 97.

SS is not a "full mode" like say SSB or FM but still has a lot of other restrictions attached to it, viz. You can't cause interference and must accept interference from other modes (fair enough). You can only use it in FCC controlled areas -- so international contacts are out. You must keep painstakingly accurate logs for 1 year following the transmission (for long delay echoes :-). You must keep your power below 100W. Comply with whatever the FCC EIC tells you to do. You may not use hybrid modes (combinations of frequency hopping (FDMA), direct sequence (CDMA) and "time" hopping (TDMA)). You can only operate on 70cm and higher: no VHF or HF SS (both of which are interesting challenges).

And following the spreading function limitations apply:

To generate the spreading sequence you may:

1. Use only one binary linear shift register.
2. You may use only the following stages/taps (the taps are added modulo-2 i.e. XORed to generate the feedback):

length 7	taps: 7, 1
length 13	taps: 13, 4, 3, 1
length 19	taps: 19, 5, 2, 1

3. The shift register must not be reset except as part of its natural sequence.
4. The shift register sequence must be used without alteration.
5. If you need more than one bit at a time (say to select a channel when frequency hopping) say n bits must be used to select the next channel from the frequency table. There is some flexibility here for "hoppers" in the several hoppers can use the same channels and the same shift register. In this case for 64 channels and a 19 bit shift register you can have 13 different users.

6. For m-ary direct sequence you must use m consecutive bits from the shift register.

These limitations mean that the FCC can find you pretty quickly (see the write up about the AMRAD/FCC tests). Best setup for this is a gain antenna and a spectrum analyser and look for the hump in the noise floor. With hybrid modes or more than one shift register this is much more difficult.

There are two routes around this:

1. is to apply for an STA (which has been granted in the past for the work which got 97.311 into the books)
2. operate within the limitations of Part 15 or some other service which does not have the sequence/type limitations.

I'd recommend getting a copy of ARRL's "Spreadspectrum handbook" if you want to know more, only \$20!

Anybody have more info on the Navy's amateur SS satellite. I read the write ups in Spreadspectrum Scene, but some more solid info would be nice. Perhaps this will stimulate more activity.

72/73 Kevin, N7WIM / G8UDP
a-kevinp@microsoft.com

Date: 19 Jan 93 15:31:08 CST
From: timbuk.cray.com!hemlock.cray.com!cherry10!dadams@uunet.uu.net
Subject: CW practice software
To: info-hams@ucsd.edu

In article b@rpi.edu, maessm@jec308.its.rpi.edu (Mathieu J. Maessen) writes:

|Look for a program called Supermorse. It is shareware, and is available, among
|other places, from the SIMTEL ftp site (SIMTEL20.army.mil).
|

I get no connection when I try to ftp to SIMTEL20.army.mil. Can anyone name any other sites?

--David C. Adams Statistician Cray Research Inc. dadams@cray.com

Old Sourdoughs never die. They just ferment away.

Date: 19 Jan 1993 22:13:22 -0500
From: news.mtholyoke.edu!mhc.mtholyoke.edu!wvogel@uunet.uu.net
Subject: help needed
To: info-hams@ucsd.edu

i recently purchased a YAESU FYG-3U uhf ht but unfortunately it came without
any paperwork or a charger
can anyone on the net help me with any info for this radio?
anything anyone would have would be greatly appreciated

will gladly pay copying and mailing costs if any involved

wvogel@mtholyoke.edu

1 xmtr shy of a station

Date: Tue, 19 Jan 1993 23:56:21 GMT
From: swrinde!zaphod.mps.ohio-state.edu!howland.reston.ans.net!
sol.ctr.columbia.edu!The-Star.honeywell.com!umn.edu!umeecs!zip.eecs.umich.edu!
hideg@network.UCSD.EDU
Subject: HTs at Disneyland
To: info-hams@ucsd.edu

In article <C140I7.65L@panix.com> oppedahl@panix.com (Carl Oppedahl) writes:

>Anybody have similar information on Disney World?
>(In Florida)

I went there about 3 years ago. The one time I tried to bring my HT in, the
moron at the gate *yelled* at me that I cannot bring a radio into the park.

Steve Hideg N8HSC

hideg@amadeus.erim.org

Date: Tue, 19 Jan 1993 20:00:30 GMT
From: sdd.hp.com!hpscit.sc.hp.com!hplextra!hpl-opus!hpnmdla!alanb@network.UCSD.EDU
Subject: intermod, overload, desense?

To: info-hams@ucsd.edu

In rec.radio.amateur.misc, dana@lando.la.locus.com (Dana H. Myers) writes:

>I would think that a shorted 1/2 wave line is not exactly the same as
>a open 1/4 wave line. The 1/2 wave line is twice as long and would have
>twice as much loss, resulting in a proportionately lower value of Q.
>Otherwise, it is essentially the same as the 1/4 wave line. No?

You can model an open 1/4-wave stub (or a shorted 1/2-wave stub) as a series R/L/C network. The Q equals the reactance of either the inductor or capacitor (equal reactance at resonance) divided by the resistance.

The 1/2-wave stub does indeed have twice as much resistance. However it also has twice as much inductance (1/2 the capacitance) so the Q remains the same.

The notch will not be as deep (6 dB less), but the top of the notch (-3 dB points) will be about twice as narrow.

AL N1AL

Date: 20 Jan 93 01:11:19 GMT
From: dog.ee.lbl.gov!overload.lbl.gov!agate!usenet.ins.cwru.edu!gatech!emory!
ogicse!flop.ENG.OST.EDU!prism.CS.OST.EDU!kayd@network.UCSD.EDU
Subject: License Delay Blues...Nov 14 Test Rx License 1-19-93
To: info-hams@ucsd.edu

Thought that some people might want to know that the delay is two months still.
I took my test 11-14-92 and just got my ticket today.

Darrek Kay
Kayd@Prism.cs.orst.edu
(503)737-9410
KB7RVD

Date: 19 Jan 93 21:40:46 GMT
From: sdd.hp.com!saimiri.prima.wisc.edu!zaphod.mps.ohio-state.edu!uwm.edu!
spool.mu.edu!olivea!sgigate!odin!chuck.dallas.sgi.com!adams@network.UCSD.EDU
Subject: OHR Spirit XCVR Kit [LONG]
To: info-hams@ucsd.edu

Gang,

well, after previous posts, i have had enough time to complete the
OHR (Oak Hills Research) Spirit QRP rig. this is their new rig. ~200 bucks.

some background is in order here.

i consider myself an expert in kit building. i have spent enough money
over 30 years (guess that makes me an OF to most of the guys on the net)
to brag about this. heathkit got so much money from me and i didn't even get
a plaque. ;-) some of the kits i've built: (how many do you recognize?)

eico at-1 (greatest tvi generator in the world!!!!)
johnson challenger (tube transmitter)
heath apache
heath hw-32, hw-16 (3 kits), hg-10b vfo
" sb-104a
" hr-1680 rcvr
" scopes, frequency counters, WWV rcvr clock, vtvn, transistor checker,
.....

QRP rigs: (of recent vantage)

heath hw-7, hw-9
tejas rf technologies - backpacker 1
a&a engineering - 40 mtr transceiver
a&a engineering - 20 mtr transceiver
oak hills research - 20 mtr transceiver
oak hills research - 40 mtr spirit transceiver
mxm industries - 40 mtr rcvr
mxm industries - 40 mtr transmitter/receiver (vxo transmitter)

and the list goes on.....

assemble my own designs and others in my spare time.....

i gave the specs to the spirit in a previous post and won't waste bandwidth
here, but already some probably think that i've already passed my yearly
allocation as it is. :-)

again, the kit is complete. well designed and laid out. if you have never
built a kit, this kit will be ok, but it is not intended for first time
builder. don't let this scare you, but do take your time and enjoy building
it. double check your work as you go. i made no mistakes in building it and
it worked right from the start. if you're experienced, this is a great kit.

you can align and tune with only another rig (preferably with digital
readout for accuracy), dummy load, wattmeter good for 5 watt levels,
etc. very helpful if you have a scope to borrow and freq counter.

you can not, i repeat, you can not get this rig assembled from OHR.
it just takes too long, even for an experienced builder, to assemble without
it costing you an arm and a leg for their time. it took me more than 15 hours,
but then again i took care and wasn't in a hurry.

the instructions are not detailed, thus the reason for someone having previous
experience recommended to build this kit. the schematics, page for each
board showing component location (2 boards + keyer), and parts list are
used frequently, in my case. the silk screening can be used to keep you from
making errors.

the transmitter is adjustable from 2 watts minimum to 5 or more watts out.
i set mine for 4 watts. uses MRF-476 as final transistor. equivalent to
RCA SK-3239, NTE236, etc. i wouldn't do more than 4 or 5 out on this critter.

the receiver is hot. i compared it across the lower 100KHz with yaesu ft-707
side by side copying the same signals. i have no test equipment to give you
performance numbers. the receiver is, IMHO, a very darn good one.
it does have AGC, which some people just gotta have and
is not usually available on the other kits.
the receiver has 400 cycle crystal filter with
audio filter following. no drift after 10-15 mins warmup in cood room (60F).
i'll measure and plot this later this week with freq counter.

rig is QSK without relay. at 30wpm and up, QSK between characters but not
between elements (i.e. dit and dah). side tone is clean and keying is also
clean. i've run it up to 60wpm and can copy without any problem; random
text. this i had to do with computer and keyer external. internal keyer
will go from 10wpm to 50wpm, but i'm no good with a benchner above 40wpm. :-)

of all the QRP kits i've assembled to date, this one is my favorite. QSK without
relay is the main factor and a darn good receiver. the MXM rcvr
also has great sensitivity, but at present time doesn't have the
selectivity and AGC. a new mxm transceiver is coming out that will have the
selectivity. it won't have case and hardware.

of the above QRP rigs, OHR Spirit takes the lead in my book. i am not paid
by OHR, just another satisfied customer. those of you who miss heathkit
may have a substitute available for their demise in this kit and others.

email me for hints and kinks if you're going to build one.

i'll part with the other rigs (the heath's have already gone). see radio.swap
later for posting.

73 de chuck, president of kits anonymous, i'm addicted to solder!!!!!! ;-)
k5fo CP-60 and i DO QRS.

p.s. no flames on my English (i do know how to do caps, but i'm a U**X nerd)
this is for information only, not a refereed journal :-)

Date: Wed, 20 Jan 1993 04:25:09 GMT
From: swrinde!sdd.hp.com!spool.mu.edu!agate!iat.holonet.net!
bwilkins@network.UCSD.EDU
Subject: Radio Shack Business Band Radio
To: info-hams@ucsd.edu

johnr@f1.facts.uky.edu (john roberts) writes:
: I saw in their catalog that they have a 1 watt business band radio
: for sale, however it says that you need an FCC certification. I was
: wondering if anyone knows how to get such certification. Can I modify my
: Ham Radio to transmit on 152.165 (like the Radio Shack one uses) and then
: get whatever license I need? How much do these licenses cost?

The radio shack 1 watt portable operates on 151.625 MHz . This ia an
itenerant business frequency. You may want to listen to the frequency in
your area as to its suitability to your task. In most areas this frequency
is filled with multiple users! somewhat like cb. Electricians, crane
operators, alarm installers, bird counters you name it. The better radios
have ctcss or pl to quiet the receiver so that you only hear your group.

A part 90 business licence is necessary and forms are packed with the radio.
This and all itenerant frequencies do not require coordination.

One could modify a FCC part 97 Amateur Radio for out of band operation,
but the radio does not have type acceptance for FCC part 90 operation. A
violation of FCC rules.

--
Bob Wilkins n6fri voice 440.250+ 100pl san francisco bay area
bwilkins@holonet.net packet n6fri @ w6pw.#nocal.ca.usa.na

Date: 19 Jan 93 22:43:32 GMT
From: news-mail-gateway@ucsd.edu
Subject: Real hams?
To: info-hams@ucsd.edu

What is with these insults. I've been licensed as G8UDP for 13 years.

72/73 Kevin, N7WIM / G8UDP
a-kevinp@microsoft.com

From: Anomaly System Administration <netmail!root@anomaly.sbs.com>
To: Kevin Purcell (Rho)
Subject: Re: Real hams?
Date: Tuesday, January 19, 1993 2:30PM

> So how do you know I'm not an extra too?

No-codes don't have the cranial capacity to understand what is required to become an extra.

No doubt you're one of those no-codes who memorized the question pools using the Radio Shack handbook, and probably can't even pass the Novice exam again if you wanted to.

MD
root@anomaly.sbs.com

Date: Tue, 19 Jan 1993 21:39:20 GMT
From: sdd.hp.com!apollo.hp.com!netnews@network.UCSD.EDU
Subject: Taking apart interior trim of '88 Nova for a UHF/VHF ham antenna..
To: info-hams@ucsd.edu

I want to install a UHF/VHF ham radio antenna in the center of the roof of my car (it will be installed using an NMO mount in a 3/4" hole) and route the cable to the side and down the pillar between the doors and up between the seats and/or in front.

I've figured out how to get at bare metal in the center of the roof (pop off the dome light cap and remove a few screws..), but I haven't been able to figure out the rest yet.

I'm looking for tips/hints/etc on removing the plastic internal window mouldings and similar internal trim from an '88 Chevy Nova (which a '87 Toyota Corolla clone). There are no visible screw heads; I suspect that they're held on via some sort of spring clips, but I have no idea where or what or how to pry to get them off, and what sorts of specialized tools might be necessary. I've seen them removed (when my windshield was replaced a year ago) but I wasn't paying all that much attention at the time..

Suggestions on which books to look in (and where to find the books) would be appreciated, as would comments from anyone with direct experience with permanent installations of ham/cellular/CB antennas in cars of this sort. (The friend who is helping me with this only has experience with GM "big iron" cars, and not toyotas and their


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/-----/||x \   /--- \   Thomas C. J. Sefranek WA1RHP
| [ ] [ ] ### [ ] ||x | || | | || 112 Great Road Shirley, Ma. 01464
|          ### | ||x | || | | || Home Phone: 508-425-6672

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Date: Tue, 19 Jan 1993 23:17:59 GMT
 From: sdd.hp.com!hpscit.sc.hp.com!cupnews0.cup.hp.com!news1.boi.hp.com!
 swalton@network.UCSD.EDU
 Subject: Voice mail "repeaters"
 To: info-hams@ucsd.edu

A friend and I are currently working on a voice mail "repeater". This device will allow any HAM to leave a message with a registered user. This is not a true "repeater" because it will use only one frequency. I am wondering whether the software (and hardware) might be of interest to anyone. I am designing it on a PC. Depending on replies, I am make it either shareware (voluntary contribution) or an actual full-blown software package. Please let me know of any interest.

-Sean Walton
 KB7RFA
 swalton@hpbsl12.boi.hp.com

Date: 19 Jan 93 22:57:26 GMT
 From: olivea!spool.mu.edu!howland.reston.ans.net!zaphod.mps.ohio-state.edu!
 malgudi.oar.net!hyperion!desire.wright.edu!bbernard@ames.arpa
 Subject: What kind of license is required to transmit on the 10GHz freq?
 To: info-hams@ucsd.edu

In article <PLXLXB2w165w@bluemoon.use.com>, moonhawk@bluemoon.use.com (David Culberson) writes:

> I have been reading up on 'ham' radio, and found diagrams, etc. for a
 > pair of dishes transmitting and recieving on the 10 GHz band. They are
 > capable of 2MBit/s, or up to 10MBit/s with the poper setup. Now, rather
 > than just build them and go off, I would like to keep my legal standing.
 > What class of license it required to broadcast on these bands? I could
 > not find this info in the 1991 ARRL Ameture Radio Handbook. Thanks for
 > any help you can give me! ^^^^^^Amateur :)

>
 > David

>
 > ---

> (- moonhawk@bluemoon.cmhnet.org - dac@dacami.cmhnet.org -)

> (- David Culberson - Check out the BMS site at dacami! -)

Dave,

I don't have a freq. chart in front on me, but techies have full privileges on the Ham Bands, 6 meters and below. I assume it goes for no codes techies too, (save CW portions). If you would like I could find the find frequencies for the VHF/UHF allocations. I don't think hams can go that higher than the 1.2 GHz band, but don't hold me accountable for that.

de N8JWR (Brad)

Date: (null)

From: (null)

...only the following sets of connections may be used:

number of stages in shift register	taps used in feedback
7	7,1
13	13,4,3,1
19	19,5,2,1

There are some other restrictions.

--

Jeff Liebermann Box 272 1540 Jackson Ave Ben Lomond CA 95005
408.336.2558 voice wb6ssy@ki6eh.#nocal.ca.usa wb6ssy.ampr.org [44.4.18.10]
408.699.0483 digital_pager 73557,2074 cis [don't]
jeffl@comix.santa-cruz.ca.us scruc.ucsc.edu!comix!jeffl

Date: Mon, 18 Jan 93 20:40:00 PST

From: pacbell.com!charon.amdahl.com!netcomsv!cruzio!comix!jeffl@network.UCSD.EDU

To: info-hams@ucsd.edu

References <1j9hqcINN9rf@matt.ksu.ksu.edu>,
<1993Jan16.201038.1158@sbcs.sunysb.edu>,
<1993Jan18.095412.29652@hemlock.cray.com>7

Subject : Re: CDMA Packet Radio (WAS Re: Who do repeater coordinators represent?)

In article <1993Jan18.095412.29652@hemlock.cray.com> andyw@aspen32.cray.com (Andy Warner) writes:

>

>In article <1993Jan16.201038.1158@sbcs.sunysb.edu>, rick@cs.sunysb.edu (Richard Spanbauer) writes:

>
>Which 3 codes are the chosen ones ? I suppose this was done to
>stop people thinking of it as "encryption". Are there any
>minimum process gain rules too ? (I understand the FCC recently
>tightened up on the requirements for Part 15 stuff..)
>--

End of Info-Hams Digest V93 #80
